

IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF OKLAHOMA

CHRISTOPHER L. STIEBENS and MARY E.)
STIEBENS,)

Plaintiffs,)

vs.)

Case No. CIV-16-629-F

RESILITE SPORTS PRODUCTS, INC. and)
LEON M. STAUFFER,)

Defendants.)

AFFIDAVIT OF LISA P. GWIN, DO

BEFORE ME, the undersigned authority, on this day appeared LISA P. GWIN, DO, who is personally known to me. After being sworn, she stated:

1. My name is LISA P. GWIN, DO. I am over eighteen years old. I have never been convicted of a crime and am fully competent to make this affidavit. I have personal knowledge of the facts stated herein, and they are true and correct to the best of my knowledge and belief.

2 I am a medically and engineering educated consultant of Biodynamic Research Corporation (BRC), and have been employed at BRC since 2012. My business address is 5711 University Heights Blvd., Suite 107, San Antonio, Texas 78249.

3. The purpose of this affidavit is to respond to ***PLAINTIFF'S OBJECTIONS TO AND MOTION TO EXCLUDE TESTIMONY OF DEFENDANTS' DESIGNATED EXPERTS, DR. LISA GWIN, ENRIQUE BONUGLI & DR. CYNTHIA DAY*** in the above-styled case.

4. My Qualifications are set forth as follows:

Professional Qualifications

The education, training, knowledge, skills and experience reflected in my curriculum vitae provide the qualifications essential to opine on the issues in the instant case, namely: analysis of vehicle dynamics, occupant kinematics, biomechanics; determination of injury potential; and medical record/imaging review and analysis. These same qualifications form the basis of each of the scientific disciplines of methodology employed in the instant case, Injury Causation Analysis (ICA).

In all my injury causation analyses, my opinions are derived from my personal review of the available materials and the application of my own academic training, knowledge, skills and



experience, including expertise in the fields of biomechanics/injury mechanics, accident reconstruction, engineering and medicine.

A. Education, background and experience:

My education includes degrees in both engineering and medicine. My CV is incorporated by reference herein. In 1987, I received my Bachelor of Science in Electrical Engineering from the Illinois Institute of Technology in Chicago, Illinois. The course curriculum included, but was not limited to, studies in physics, chemistry, mathematics, statistics, dynamics, material science, fluid and thermodynamics, and design methodology.

I continued my education with a Bachelor of Science in Nursing in 1995 and then went on to receive my Medical Degree in 2003. My studies during the first two years included course work in Human Anatomy, Physiology, Biochemistry, Neuroscience, Psychology, Genetics, Pharmacology, Pathology, and Microbiology. My clinical training during the last two years in medical school included rotations on several medical services including Internal Medicine, General Surgery, Family Medicine, Pediatrics, Obstetrics & Gynecology, Neurology, Psychiatry, Pathology, Intensive Care, Emergency Medicine, Plastic Surgery, Ophthalmology, Cardiology, Radiology, Anesthesia, and Occupational Medicine.

I spent three years in an emergency medicine residency program caring for patients in the emergency department, with rotations in trauma and surgical intensive care, pediatrics and pediatric intensive care, internal medicine, obstetrics, orthopedic surgery, air medical transport, and EMS. During the last two years of residency, I worked in several rural emergency departments as the sole physician. I was also part of the team of physicians who provided emergency medical care at Kentucky Speedway.

After residency, I worked full-time for six years at a rural emergency department in Wyoming. I acted as medical director for the trauma service, evaluating and improving the care provided for all serious trauma patients seen in the ER. Additionally, I worked part time at a rural Indian Health Service emergency department in Montana, an urban Indian Health Service emergency department in Phoenix, two other rural Wyoming ERs, and a larger community Wyoming ER. When I joined BRC in 2012 I continued working part time as an emergency physician until 2016 when I moved to Colorado. Since 2008, I have also volunteered my medical expertise at clinics for the uninsured and I currently volunteer at a homeless clinic in Cheyenne, Wyoming.

Over the course of my career as a physician, I have directly cared for thousands of patients with traumatic, acute, and chronic medical, neurologic, cardiopulmonary, or orthopedic conditions. These conditions have ranged from minor to life and limb-threatening, requiring emergent, and occasionally invasive, life-saving procedures.

I have remained certified by the American Board of Emergency Medicine and hold current medical licenses in Texas, Montana, and Wyoming. I maintain currency by attending conferences and remaining active in organizations such as the American Academy of Emergency Medicine, where I volunteer my time twice a year as a mentor to young emergency physicians preparing to sit for their oral board certification exam. I am also active in the Association for the

Advancement of Automotive Medicine's Abbreviated Injury Scale subcommittee, updating the AIS dictionary. I am also an assistant clinical professor at the University of the Incarnate Word medical school.

I am currently employed at BRC since 2012 as a consultant in the field of injury causation analysis (ICA). In addition to my education, training, and experience as a physician and graduate engineer, I have also received training in accident reconstruction, including completion of all requisite coursework at Northwestern University, and received full accreditation from the Accreditation Commission for Traffic Accident Reconstruction (ACTAR) in 2014. My expert knowledge in the above-mentioned areas is entirely sufficient for application in the context of biomechanical and injury causation analysis. Furthermore, the possession and exercise of such expert knowledge does not depend upon the acquisition of the technical, medical skills required for the performance of specific orthopedic, neurosurgical or radiological procedures. Combined with my medical clinical training and my practice experience in Emergency Medicine I am qualified to make assessments in the disciplines of injury potential and medical analysis which are integral to biomechanical and injury causation analyses. As a board certified emergency physician, I am specifically trained in triage, assessment, diagnosis, and treatment of acutely injured patients. Distinguishing between acute injuries and chronic conditions is a key aspect of emergency care. Furthermore, understanding the mechanisms of injuries is essential to optimum care; if a physician does not understand the injury potential of an event, she is prone to miss critical injuries.

B. Biomechanics training and testing

After joining BRC in 2012, I completed a six month, in-house training program with respect to biomechanics and ICA. My expertise in Biomechanics comes from my formal education at the undergraduate and graduate levels, the entirety of my training and work experience, including from BRC. I have participated in full scale vehicle crash testing as well as destructive testing of vehicle components. I have authored research papers, published in the peer-reviewed literature, and studied kinematics and injury potential in low speed rear automotive impacts. I have given presentations on accident investigation, medicine, and engineering at professional conferences.

To date, I have reviewed over 100 cases in which injuries were claimed and in which I applied biomechanical analyses and the ICA methodology. I have utilized my engineering and medical training and applied engineering principles in understanding the effects of forces and accelerations when applied to the human body. I have conducted tests where human subjects, including myself, have been instrumented and acceleration data has been collected during various activities of daily living as well as vehicle-to-vehicle collisions. I have provided testimony in state and federal cases in California, Colorado, Florida, Georgia, Iowa, Missouri, New Mexico, New Jersey, Ohio, Oklahoma, Texas, Virginia, West Virginia, Wisconsin, and Wyoming as an expert biomechanic and/or accident reconstructionist utilizing the ICA methodology.

In summary, my education, training, experience, skill and knowledge, as detailed in my Curriculum Vitae, provide the special scientific and technical knowledge necessary to reliably apply the process of ICA. My qualifications and experience allow me to competently assess vehicle dynamics, occupant kinematics, biomechanics, injury potential and medical analysis. I am thereby qualified by my education, knowledge and experience to perform biomechanical assessments and analyze the potential effects of forces and accelerations on the human body.

5. The Principles and Methodology of Injury Causation Analysis are set forth as follows:

Injury Causation Analysis Overview

ICA is neither new nor novel. The methodology was not created by BRC and has been in existence since the middle of the last century. Injury Causation Analysis (ICA) is the scientific method used to analyze the specific mechanism of injury for people who experience incidents in workplaces, transportation and other settings. ICA involves comparing the mechanical forces involved in the incident with the body's injury tolerance. Bio-mechanical engineering or biomechanics, a component of ICA, is the application of physics and mechanical engineering to the human body. The ancient Hebrews, Greeks and other early scientists have understood and performed injury causation analysis (Mackay 2007). Hippocrates wrote, "Of those who are wounded in the parts about the bone, or in the bone itself, by a fall, he who falls from a very high place upon a very hard and blunt object is in most danger of sustaining a fracture and contusion of the bone and of having it depressed from its natural position. Whereas he that falls upon more level ground and upon a softer object, is likely to suffer less injury in the bone, or he may not be injured at all."

Like most engineering and scientific subjects, impact biomechanics has evolved from early observations of natural phenomena, through an experimental period, to a theoretical framework which establishes general laws and precepts. Since 1687, Newton's three laws of motion have withstood the test of time to become the foundation of modern kinematics-the study of objects in motion. Hugh DeHaven is credited with the first insights into human tolerance to crash forces when he was involved in a mid-air collision in 1917. While convalescing from his injuries, he realized that his survival was due to the maintenance of the integrity of his cockpit which, together with a safety harness, protected him from localized contacts and catastrophic injuries which killed the other pilot. He also observed that his own serious abdominal injuries related to the buckle of his harness, which localized the loading to cause a laceration of the liver. He concluded that crash-protective design, rather than capricious good fortune, had ensured his survival (DeHaven 1942).

Academic institutions have established theoretical and practical courses in biomechanical engineering, injury causation and impact analysis. Researchers such as USAF Colonel John Paul Stapp used themselves as test subjects and published their findings. Others, such as Yamada, have published injury tolerance tables for individual body parts (McElhaney, Roberts, and Hilyard 1976; Yamada 1970). Eiband published similar work and developed corridors to

delineate areas of expected safety and injury (Eiband 1959). Textbooks have been published which discuss the modern process of ICA (King 2018; Nahum 2002; McMeekin 1985).

The ICA process is a tool which can be used to accomplish different tasks. Primarily the ICA process has been used to understand events, which harm or have the potential to harm people so that future harmful events may be avoided. It can also be used forensically to find the legal basis for a causal relationship between an incident and an injury.

A. ICA as the Product of the Scientific Method

Regardless of the indication to perform an ICA, the methods are similar and are adapted from the scientific process itself. The scientific method is the basis of most of our culture's technological advancement; its steps include:

- The statement of the problem
- The review of existing literature
- The generation of a hypothesis
- The testing of the hypothesis
- The collection and analysis of data from the test
- The final conclusion

As ICA is a specialized adaption of the scientific process, it follows a similar method:

- Statement of claimed interactions during subject event
- Review of the background facts, including the subject or occupant's motion
- Analysis of subject's interaction with surroundings (biomechanics)
- Review of the existing literature to determine injury potential during the subject event
- Hypothesis testing by comparison of injuries found in the medical record and any relevant experimental testing and analysis
- Final conclusion

The first two steps use physics and commonly accepted techniques to reconstruct the subject event. Formal course work and textbooks such as those developed by Northwestern University support the formal expert certification process for automotive crash reconstruction (Fricke 2010). The application of biomechanics, the combination of engineering and biology, determines human tissue loading. This leads to the next step of considering potential injuries expected from this loading. The last step compares expected injuries with those injuries documented in the medical records. Some of the procedural details vary to allow the analysis of events across the entire range of aerospace, automotive, industrial and other settings.

For example, vehicle dynamics in automotive investigations typically includes a determination of the Principal Direction of Force (PDOF) and the impact-related change of velocity (ΔV). These quantities are typically determined based on examination of the vehicle, including photographs and/or repair estimates of the vehicle. As speeds increase, the potential for damage and injury typically increases and the investigative techniques may change as well. As most

events follow commonly described patterns, the published scientific literature supports the process in both the investigation of the event as well as the pattern of injuries. Organizations such as the Society of Automotive Engineers, the Association for the Advancement of Automotive Medicine and the Aerospace Medical Association publish scientific articles describing the process and outcome of relevant scientific inquiry.

B. ICA's Potential Rates of Error. There is no error in the proper application of physical laws. When not applied correctly, errors are discoverable and demonstrable by those capable of performing a correct analysis. Similarly, errors in the interpretation of medical information can be corrected by careful and critical review. Standards with regard to experimental techniques, instrumentation standards, and injury criteria have been established by professional organizations such as the Society of Automotive Engineers (SAE), and the American National Standards Institute (ANSI).

Any collected data is subject to measurement error. The rate of error is based upon the ability of the measuring devices to attain consistent levels of accuracy traceable to the National Bureau of Standards and Technology. Measurement error is taken into account through the application of descriptive statistics in reporting and utilizing test results. This process allows conclusions drawn from the analyses to be stated in terms of ranges which account for potential errors. When this approach is rigorously followed in the performance of ICA, the rate of error becomes known, and can be taken into account.

C. ICA Subjected to Peer Review and Publication. The theory and techniques of ICA are longstanding (it is not a new or novel science) and have been and are subject to extensive peer review and publication in the numerous textbooks, journals and scientific and professional conference proceedings in which this subject has been and is presented. Again, a long list of publications citing the use and application of ICA is attached hereto.

D. ICA's Acceptance / Application by Relevant Scientific Community. Broad evidence of the general acceptance of the theory and techniques of ICA in the scientific community exists. Practical application of the theory and techniques has been undertaken by government agencies including the Department of Defense, the Federal Aviation Administration (FAA), the National Transportation Safety Board (NTSB), the Centers for Disease Control and Prevention, the Occupational Safety and Health Administration (OSHA) and the National Highway Traffic Safety Administration (NHTSA) of the Department of Transportation. Incident investigation by United States government agencies such as the NTSB, FAA, OSHA and the US military services rely on ICA. The use of injury criteria and product design standards in Federal Motor Vehicle Safety Standards (FMVSS) are based on these theories and techniques. This includes all such standards applying to the design of vehicle seats, occupant restraint systems, and structural components of the passenger compartment.

NHTSA uses elements of ICA in its ongoing and systematic survey of fatal and non-fatal automobile accident data for inclusion in the National Automotive Sampling System (NASS) and the Fatality Analysis Reporting System (FARS) sponsored by the U.S. Government. The widespread use of computer programs such as EDCRASH, EDSMAC, HVE, MADYMO, and finite-element modeling systematically apply accident reconstruction theories and techniques in determining impact severity, vehicle dynamics and occupant kinematics. Techniques of ICA are widely endorsed and used by academic, industrial and government groups including, but by no means limited to, those previously mentioned, in order to advance the technology of vehicle occupant protection.

E. Non-judicial Uses of the ICA Methodology. ICA is, first and foremost, a process aimed at predicting and preventing injuries. ICA was developed to support the continuing efforts of the scientific community to understand the nature of human traumatic injury and to devise methods of protection. ICA provides the fundamental method for the investigation of occupant injuries and fatalities. To prevent injuries through enhanced protection, NHTSA has used elements of ICA to learn the nature of occupant injury in motor vehicles. In response to this need, and at the request of the NHTSA, Engineering Dynamics Corporation developed computer-based software programs (EDCRASH and EDSMAC) that permit determination of the conditions of impact, including vehicle dynamics and occupant kinematics. The resulting statistical information has allowed determination of the nature of injuries so that redesign of safety equipment can lead to future increased protection, or prevention. Current extensive research sponsored by NHTSA on air bag technology is directly related to information derived from these efforts. The Crash Injury Research Engineering Network (CIREN) utilizes a multi-disciplinary approach based on ICA to draw conclusions about injury causation. ICA was used by former and current BRC consultants in the widely publicized NASCAR investigation into Mr. Dale Earnhardt's death while racing. Additionally, BRC was retained by the National Aeronautics and Space Administration (NASA) to examine injury causation mechanisms and crew survivability issues with regard to the loss of the Space Shuttle Columbia's breakup on re-entry over Texas.

The work of understanding injury causality has led to the remarkable evolution in safety. The process of ICA is commonly used to improve health and safety by enhancing primary and secondary prevention of injuries. Primary prevention avoids an injurious event and secondary prevention minimizes injury once an event occurs. Medical treatment constitutes tertiary prevention by healing injuries. Preventive measures can be implemented by eliminating hazards or applying engineering or administrative controls. The ICA process is routinely used to enhance safety, determine cause and perform other vital tasks to our society. The ICA process leads to continuous improvements such as three-point restraints, driver airbags, side impact airbags and ongoing efforts that make our transportation, work and homes safer than ever before. The Air Force teaches the ICA process at its School of Aerospace Medicine as well as safety officer investigation courses. Occupational medicine and aerospace medicine are specialties within the American Board of Preventive Medicine. These specialties, which predate family practice and emergency medicine, teach and use ICA to prevent injuries and improve safety. Physicians supporting all industrial worksites use ICA to protect workers across America.

None of the publications listed in the Bibliography which appears at the end of this Affidavit was written for litigation matters. They were published in the scientific and technical domain to help provide a basis for eventual solutions to problems of injury.

F. ICA Admissibility. Used retrospectively, ICA can provide information relevant to judicial proceedings. Federal and State courts across the country have recognized the usefulness of testimony by experts with education, training, skills, and experience in the relevant disciplines of ICA to assist jurors in understanding the complex relationships between vehicle dynamics and clinical injury. BRC consultants, including myself, have testified at trial utilizing ICA in more than 1300 cases, in more than 700 Federal and State court jurisdictions, since the adoption in June 1993 of the *Daubert* criteria for the admissibility of scientific expert testimony. These cases also include multiple occasions when such testimony has been provided in jurisdictions which retain Frye or similar criteria.

G. Traditional Medical Examination Insufficient for Causation Analysis

While most treating physician accept the patient's subjective history without question, other medical agencies advocate for a more rigorous approach to establishing medical causation. The American Medical Association (AMA) has published *The Guides to the Evaluation of Permanent Impairment*, now in its sixth edition. This book defines causality as "an association between a given cause (an event capable of producing an effect) and an effect (a condition that can result from a specific cause) with a reasonable degree of medical probability" (Rondinelli 2008).

In the *AMA Guides to the Evaluation of Disease and Injury Causation*, states, "A causation examination differs from the traditional clinical examination designed to determine the diagnosis and treatment for specific symptoms. The causation evaluation requires insight into the events and exposures surrounding symptom onset. Though many of the standard tools are employed—history, physical examination and test results, some methods are dissimilar to medical practice. A correct diagnosis is key to both treatment and causation analysis" (Melhorn, J; Talmage, J; Ackerman, W; Hyman, M 2014). It is the training and methodology in the performance of the causation examination, which is sometimes lacking. The AMA has published, "Evaluators should consider adopting a strict policy of refusing to base any conclusions on examinee self-report, especially any forensic conclusions such as causative attributions."

The AMA bases their statements on, "Scientific findings indicate that a reliance on reports from claimants actually jeopardizes the health of claimants." They highlight research demonstrating that claimants systematically underreported every pre-claim health issue that might have provided a non-injury related explanation for their pain complaints" as well as exaggerate their current levels of impairment.

6. Application of ICA to the Instant Case:

A. ICA Includes an Accident Reconstruction Component:

As described previously, the first, integral component of ICA involves accident reconstruction and an objective analysis in quantifying the severity of the subject collision, which analysis and reconstruction is, as noted above in the qualifications section of this affidavit, within my skillset and qualifications to undertake. In this matter, I referred to the accident reconstruction performed by Enrique Bonugli, which relied upon the available photos of Plaintiff's vehicle as well as the submitted repair estimates in determining the extent and limit of the damage to Plaintiff's vehicle. This is a common and recognized methodology in the field of accident reconstruction. The analysis continued by estimating the force required to cause the damage visible in the vehicle photos. My ICA is not duplicative of accident reconstruction, but builds upon it.

B. ACTAR Certification

As noted in my Curriculum Vitae, I have been certified by ACTAR as an accident reconstructionist. A basic overview of the ACTAR certification process can be found reviewing the ACTAR (www.actar.org) website. Under the "History of ACTAR" tab, they state:

"ACTAR was founded by and exists for the benefit of the traffic accident investigation and reconstruction community. The Commission is not obligated to nor controlled by any governmental body or agency. Since its incorporation in 1991, the ongoing goal of ACTAR has been to promote within the legal and scientific community, recognition that an ACTAR Accredited Traffic Accident Reconstructionist has demonstrated competence with respect to the minimum training standards established by the NHSTA study. Incorporation of new developments in technology and industry trends assures the accreditation process is fresh and up to date."

In order to be eligible to take the examination, I submitted an application to the ACTAR Board outlining my educational background, including the required Northwestern University coursework, and professional experience. After their review and verification of my qualifications and satisfaction of the prerequisite coursework, I was granted permission to sit for the examination and achieved accreditation in 2014. As described above, the ACTAR certification required a significant educational achievement and personal commitment on my part to obtain this certification and is not an honorarium.

C. Background in Injury Causation

While I did not participate in a specific course titled biomechanics, during medical school and residency, I received training in injury mechanisms, which includes the same foundational principles as ICA. Knowledge and understanding of injury mechanisms remains an essential component with regard to any biomechanical or forensic analysis.

ADDRESSING SPECIFIC COMPLAINTS RAISED BY PLAINTIFFS' MOTION:

7. Plaintiffs complain that I have an electrical engineering degree, not a degree in mechanical engineering. This attempt to disregard my designation as an expert in the areas of biomechanics, medicine, accident reconstruction, engineering, and causation by referring only to my degree ignores my full list of qualifications to perform a biomechanical analysis. As demonstrated above in the qualifications sections, I am in fact qualified in each of these areas which are salient to my opinions in this matter.

8. Plaintiffs complain that my medical degree was from “a new medical school,” and that I have served traditionally underrepresented communities throughout the course of my medical practice. This attempt to question my credentials ignores the fact that I am in fact a Board Certified Emergency Medicine Physician. My medical school was a new branch of the Chicago campus of Midwestern University, founded in 1900. Further, Plaintiffs’ implications that an individual in a “small, rural, or Indian” facility does not experience the same emergencies, traumas, or infirmities as other individuals and therefore their medical care does not count as real experience is inaccurate. An emergency physician must be impeccably trained and extremely talented to work in a rural facility with very few, if any, specialists, especially when that facility is hundreds of miles from a tertiary medical center. I also worked in the ER at Detroit Receiving Hospital, the busiest ER, and one of two level I trauma centers in Detroit, and I did my residency at the only level I trauma center in Eastern Kentucky.

9. Plaintiffs complain that I am not a licensed professional engineer (“P.E.”), and that this is somehow a requirement to perform an Injury Causation Analysis (“ICA”). I have the requisite multi-disciplinary qualifications to perform an ICA. I hereby state that I am not involved in the construction, design, or analysis of a structure for occupancy nor providing expert witness concerning those activities. I do not hold myself out as a PE, however, noticeably there is also not a PE certification for Biomechanical Engineering.

10. Plaintiffs complain that I have stated my opinions to a reasonable degree of medical and scientific certainty. It is appropriate to provide my opinions resulting from the multi-disciplinary ICA in terms of reasonable degree of medical certainty, as they touch on medicine. It is also appropriate to express my opinions to a reasonable degree of scientific certainty for the same reasons.

11. Plaintiffs complain that my knowledge, skills, education, training, and experience as a Board Certified Emergency Medicine physician are insufficient to render an opinion as to plaintiffs’ alleged injuries are incorrect. As set forth above in my Qualifications. This includes the exclusion of the current event as having sufficient force to cause the alleged conditions. The issue in this matter is causation and whether the condition being treated was acute in nature. For that, I am more than qualified and experienced to opine, as set forth previously. Stating that an emergency medicine physician is outside the scope to determine whether someone was injured ignores the extensive training, education, and experience I have gathered in just such a specialty.

12. Plaintiff’s claims also presume that there was an acute injury resulting from an interaction with sufficient force to cause the presumptive injury. Plaintiff, however, does highlight one of my more applicable qualifications in performing an injury causation analysis, while somehow deeming it a negative. I continue to be a practicing physician and maintain

appropriate ABEM board certification in Emergency Medicine for the evaluation and diagnosis of acute injuries, similar to as well as more severe injuries than those claimed by Plaintiff in this matter. Even in the instance where patients are unable to communicate, I am able to determine appropriate additional medical investigations and testing, as required, based on injury patterns and my training in injury causation. Based on this, I have determined that Plaintiffs' injuries were not acute in nature but were preexisting or degenerative.

13. Plaintiffs tangentially reference "only a partial medical record," that I have reviewed, implying that something is missing that would alter my analysis regarding whether an acute injury occurred. Assuming this missing information is brain imaging, Plaintiffs did not undergo such imaging studies (as their treating physicians determined it was not indicated).

14. Plaintiffs' complaints that I have relied upon the expert impressions of a Board Certified Radiologist, Dr. Day, ignore the fact that medical doctors frequently consult with and rely upon the impressions of a radiologist in forming their opinions.

15. Plaintiffs complain that I am not qualified under 702 and Daubert. I am offering testimony on medical and injury causation and I am in fact a physician, accident reconstructionist, and graduate engineer. In the Stiebens' case, I have determined that there was no acute injury, something that is well within my knowledge, skills, education, training, and experience as a Board Certified Emergency Medicine physician, as previously discussed.

16. Plaintiffs claim that my opinion will not be helpful to the trier of fact. In the instant case, we have a complex interaction of two individuals inside a vehicle in motion following its interaction with other vehicles which requires the application of principles including physics, engineering, and medicine, none of which are in the category of basic or common knowledge. Further, understanding whether and how orthopedic and neurological injuries may result from specific interactions is well outside basic or common knowledge.

17. Plaintiffs ask the court to determine that the opinions of one expert are better than another. Plaintiffs rely on the differing opinion of John J. Smith, PE to assert that my opinions are wrong and therefore should be struck. Mr. Smith's main opinion is merely a complaint that auto accidents are complex interactions that can't be fully understood, even with the application of science and medicine. Mr. Smith is a degreed Geophysical Engineer with a Master's Degree in Electrical Engineering. Further, the only other qualifications Mr. Smith possesses are an out-of-state PE, and a correspondence degree in "Biomechanical Trauma." Plaintiffs complain that I do not have a Biomechanical Engineering degree, but ignore the fact that Mr. Smith does not have a Biomechanical Engineering degree either and without a medical degree and trauma treatment experience is not qualified to opine regarding injury potential.

18. Plaintiffs complain that my methodology is flawed and use Mr. Smith's differing opinion as support. My opinions are the product of a well-established methodology. My opinions, based on an ICA of the subject event, meet the requirements of Daubert.

19. Plaintiffs complain that I have not visited the scene of the accident, personally examined or taken measurements of the vehicles, inspected or measured the vehicle's interior, nor

accounted for the Stiebens' unique constitutions. By utilizing the ICA methodology, the evidence which will be presented at trial, namely the fact of an automobile collision and a claim of injury therefrom, were analyzed to determine whether the claimed injuries were consistent with the forces experienced by the Stiebens. These forces were determined through standard Accident Reconstruction methodologies, and do not require a hands-on inspection of the situs or vehicles where sufficient evidence exists. In this case, the ICA considered the damage photographs, repair estimates, and medical records of each individual and related each of them to the analysis. My opinion is a result of this evidence being considered and is consistent with accepted biomechanical methodologies and specifically the ICA methodology.

20. Plaintiffs complain that I did not review Mary Stiebens' radiological imaging but considered "her films" in my analysis. I reviewed Ms. Stiebens radiological imaging with a board-certified radiologist, Dr. Day, and included reference in my report to the same. No acute injury was present, as stated in my report. Plaintiffs' statement that I have not referenced "an accepted methodology that establishes the ability to diagnose defects seen on imaging studies," is misleading, as the methodology comprises the study of radiology, which is among the courses of study in my medical degree and practiced regularly by me throughout the course of my medical practice.

21. Plaintiffs argue that my opinions regarding imaging are cumulative to those of Dr. Day. I have provided little by way of opinion regarding the imaging studies in this matter, other than to restate Dr. Day's impressions of the imaging as part of my analysis to demonstrate where the information was introduced.

22. I have clearly established that I have the appropriate medical, engineering and biomechanical background, as set forth above in the *Professional Qualifications* section. I have the skills, education, training, and experience in biomechanics necessary to render a qualified and valid opinion in this matter.

23. As detailed above extensively in the *Injury Causation Analysis* section, my analysis is in fact reliable as it uses the same information available to Plaintiffs in making their claims of injury. My analysis was performed in keeping with the long-established methodology and even if Plaintiffs disagrees with the results, this goes to the weight, not the admissibility of the testimony.

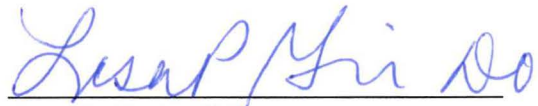
24. The non-judicial uses and historical development of the ICA are a well-recognized and long-utilized methodology which has been tested, subjected to peer review through extensive literature, and whose error rates are known. Again, see the examples listed in *Injury Causation Analysis*, above.

25. BRC consultants, including myself, have been allowed to testify in more than 1300 cases in over 700 Federal and State court jurisdictions in 49 of 50 states since the adoption in June 1993 of the *Daubert* criteria for the admissibility of scientific expert testimony and its progeny. BRC consultants' application of the Injury Causation Analysis was even sought by NASA in the wake of the Columbia disaster.

26. I have provided testimony in state and federal cases in California, Colorado, Florida, Georgia, Iowa, Missouri, New Mexico, New Jersey, Ohio, Oklahoma, Texas, Virginia, West Virginia, Wisconsin, and Wyoming as an expert biomechanic and/or accident reconstructionist utilizing the ICA methodology.

27. In Summary, I am qualified by my education, skills, training, and experience to undertake the accident reconstruction and injury causation analysis, and I have appropriately employed a reliable and accepted methodology to reach my expert opinions which are summarized by report and submitted in addition to my affidavit.

FURTHER AFFIANT SAITH NAUGHT.

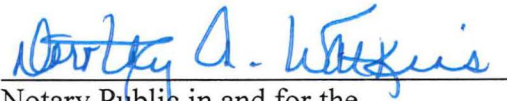
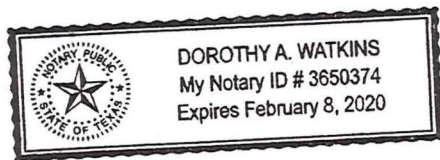


Lisa P. Gwin, DO
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STATE OF TEXAS

COUNTY OF BEXAR

Sworn and subscribed to me by **Lisa P. Gwin** on this the 22ND day of AUGUST 2018, to certify which witness my hand and seal of office.



Notary Public in and for the
State of Texas

My Commission Expires: 02-08-2020

**REFERENCES APPEAR ON FOLLOWING PAGES AND ARE INCORPORATED BY
REFERENCE HEREIN**

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